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FACT SHEET

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HOW TO ESTIMATE SOIL MOISTURE BY FEEL

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Irrigation is a means of maintaining a continuous supply of available moisture in the soil's plant root zone throughout the growing season. Do not allow soil moisture to reach the wilting percentage, because plants wilt permanently and growth is restricted.

Several days may be required to cover the entire acreage; therefore, start irrigation soon enough to reach the last portion of the field before its available moisture has been exhausted.

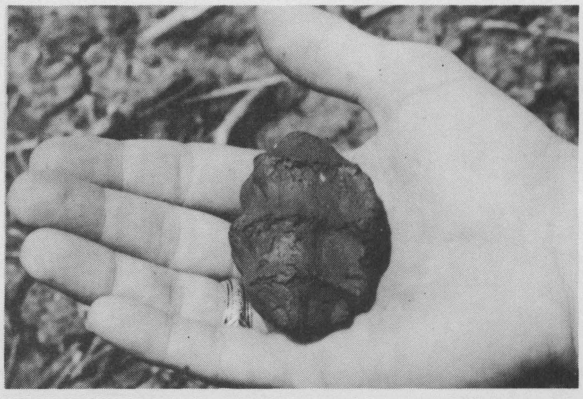
Regular inspection of soil moisture conditions at several depths provides information about the amount of available moisture in the soil and the root depth of plants. This gives a basis for determining when to irrigate and how much water to apply. For most crops, begin irrigation when about 50 percent of the available moisture in the soil root zone remains.

A practical method of estimating available soil moisture is to squeeze a small amount of soil to form a ball. Refer to the chart on the reverse side for a description of the feel and appearance of different textured soils containing various moisture percentages. If the available water-holding capacity of your soil is known, you can determine the amount of water to apply by irrigation.

Estimating soil moisture by feel and appearance is not a precise measuring method. However, this method is effective if results are observed carefully. For example, suppose you have a sandy clay loam soil which you estimate contains an average of 50 percent available moisture in the root zone depth of 3 feet. You estimate the soil should hold 2.0 inches of available moisture per foot of soil, or a total of 6.0 inches in the root zone at field capacity. Since available moisture remaining is estimated at 50 percent, apply 3 inches of irrigation water.

Depth of water penetration into soil can be determined a day or two after irrigation by using a soil probe. (A probe can be made of a ½-inch steel rod 4 or 5 feet long with a short piece of ¾-inch pipe welded on one end to serve as a handle.) Although a soil probe is easy to use, a sharpshooter shovel or post-hole digger can be used to determine the water penetration depth. Water should have penetrated 3 feet. If penetration depth is more or less than 3 feet, adjust the irrigation schedule or the amount of water applied. By observing actual results after each irrigation, you soon can determine accurately when to irrigate and how much water to apply.

TOO DRY



IDEAL

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WATER HOLDING CAPACITY OF DIFFERENT TEXTURED SOILS

Soil texture	Available water—inches per foot of depth
Sandy (coarse)	.8 - 1
Sandy loams (moderately coarse)	1 - 1.5
Silt loams, sandy clay loams, loams (medium)	1.5 - 2
Clay loams and clays (fine)	2 - 2.5

Chart For Estimating Soil Moisture by Feel and Appearance

DEGREE OF MOISTURE	PERCENT USEFUL SOIL MOISTURE REMAINING	FEEL OR APPEARANCE OF SOILS			
		COARSE	MODERATELY COARSE	MEDIUM	FINE
Dry	0	Dry, loose, single-grained, flows through fingers.	Dry, loose, flows through fingers.	Powdery, dry, sometimes slightly crusted but easily breaks down into powdery condition.	Hard, baked, cracked; sometimes has loose crumbs on surface.
Low	25 to wilting percentage	Soil appears to be dry; will not form a ball with pressure.*	Soil appears to be dry; will not form a ball.*	Somewhat crumbly, but will hold together from pressure.*	Somewhat pliable; will ball under pressure.*
Fair	25 to 50	Soil can be formed slightly when pressed and appears to have more moisture than indicated above.	Tends to ball under pressure but seldom will hold together.	Forms a ball, somewhat plastic; will sometimes slick slightly with pressure.	Forms a ball; some clays will ribbon out between thumb and forefinger.
Good	50 to 75	Tends to stick together slightly; sometimes forms a very weak ball under pressure.	Forms weak ball, breaks easily, will not slick.	Forms a ball and is very pliable; slicks readily if relatively high in clay.	Easily ribbons out between fingers; has a slick feeling.
Excellent	75 to field capacity	Upon squeezing no free water appears on soil but wet outline of ball is left on hand.	Same as coarse.	Same as coarse.	Same as coarse.
Too wet	Above field capacity	Free water appears when soil is bounced in hand.	Free water will be released with kneading.	Can squeeze out free water.	Puddles and free water form on surface.

*Ball is formed by squeezing a small amount of soil very firmly in your hand.

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